CLAIMS:

[1-46] (CANCELLED)

47) (Withdrawn-currently amended) System of entangled samples comprising excited nuclei of at least one kind of excited isomer nuclides in which at least one said excited isomer nuclide has at least one metastable state that deexcites by emitting gamma rays, called hereafter deexcitation gamma rays, in which at least some of said excited nuclei form groups of two or several entangled excited nuclei, which are distributed in whole or in part of the aforesaid samples, forming the entangled samples of the system of entangled samples, said entangled samples being able to be separated in space and presenting quantum couplings between some of said excited nuclei contained in these separate entangled samples, except where said kind of excited isomer nuclides is Cadmium (111Cd48m).

48) (Withdrawn-currently amended) System of entangled samples according to claim 47 in which the aforementioned kind of excited isomer nuclides, is chosen in the group of Niobium (93Nb41m), ~~Cadmium (111Cd48m),~~ Cadmium (113Cd48m), Cesium (135Ce55m), Indium (115In49m), Tin (117Sn50m), Tin (119Sn50m), Tellurium (125Te52m), Xenon (129Xe54m), Xenon (131Xe54m), Hafnium (178Hf72m), Hafnium (179Hf72m), Iridium (193Ir77m), or Platinum (195Pt78m).

49) (Withdrawn-currently amended) System of entangled samples according to claim 47 in which said entangled samples are in any physical form or chemical form, for example the form of solids in sheet or powder, or the form of fluids or gases (for example case of Xenon), which contain a proportion of at least one or several aforesaid isomer nuclides, for example Niobium (93Nb41m), ~~Cadmium (111Cd48m),~~ Cadmium (113Cd48m), Cesium (135Ce55m), Indium (115In49m), Tin (117Sn50m), Tin (119Sn50m), Tellurium (125Te52m), Xenon (129Xe54m), Xenon (131Xe54m), Hafnium (178Hf72m), Hafnium (179Hf72m), Iridium (193Ir77m), Platinum (195Pt78m), or in the form of alloys, mixtures, or in the form of chemical compounds incorporating a proportion of one or several of the aforesaid excited isomer nuclides.

50) (Withdrawn) System of entangled samples according to claim 47 including said entangled samples, of which one at least is in a physical form and / or a chemical form different from the form of one or several other said entangled samples, for example one in the form of powder and the other in the form of a sheet, or one in the form of a solid, or in the form of powder or gas and the other incorporated in injectable carrying molecules for example, in salts or molecules put in solution.

51) (Withdrawn) System of entangled supports comprising a plurality of systems of entangled samples according to claim 47 in which at least two entangled samples from at least some of said systems of entangled samples are laid in relation to each other on at least two supports, for example disks, called thereafter by convention the entangled supports, for example by positioning an entangled sample of several of said systems of entangled samples on each one of the aforesaid supports according to a defined order.

52) (Withdrawn) System of entangled samples according to claim 47 in which the aforementioned kind of excited isomer nuclides is Niobium (93Nb41m).

53) (Withdrawn) System of entangled samples according to claim 47 in which the aforementioned kind of excited isomer nuclides is Cadmium (113Cd48m).

54) (Withdrawn) System of entangled samples according to claim 47 in which the aforementioned kind of excited isomer nuclides is Indium (115In49m).

55) (Withdrawn) System of entangled samples according to claim 47 in which the aforementioned kind of excited isomer nuclides is Tin (117Sn50m).

56) (Withdrawn) System of entangled samples according to claim 47 in which the aforementioned kind of excited isomer nuclides is Tin (119Sn50m).

57) (Withdrawn) System of entangled samples according to claim 47 in which the aforementioned kind of excited isomer nuclides is Tellurium (125Te52m).

58) (Withdrawn) System of entangled samples according to claim 47 in which the aforementioned kind of excited isomer nuclides is Hafnium (178Hf72m).

59) (Withdrawn-currently amended) Method of manufacturing a system of entangled samples comprising the following steps:

(a) one prepares together samples containing nuclei of at least one kind of isomer nuclides having at least one metastable state, except where said kind of isomer nuclides is Cadmium (111Cd48),

(b) one proceeds to the irradiation by means of gamma rays, at least partly entangled, of a sufficient energy to excite certain of the aforesaid nuclei to at least one metastable state, said entangled gamma rays forming groups which are generated, for example, either by a source of gamma rays emitted in a cascade, or by a generator of gamma rays coming from the Bremsstrahlung of accelerated particles, the groups of said gamma rays, when they are entangled, exciting and transferring their entanglement to the corresponding said nuclei distributed in said samples irradiated together and forming the separate entangled samples of the aforesaid system of entangled samples.

60) (Withdrawn) Method of manufacturing according to claim 59 in which one uses aforementioned entangled samples of which one at least has undergone a physical and / or a chemical transformation after the aforementioned irradiation.

61) (Withdrawn-currently amended) Method of manufacturing according to claim 59 in which the aforementioned kind of isomer nuclides is chosen within the group of Niobium (93Nb41m), ~~Cadmium (111Cd48m),~~ Cadmium (113Cd48m), Cesium (135Ce55m), Indium (115In49m), Tin (117Sn50m), Tin (119Sn50m), Tellurium (125Te52m), Xenon (129Xe54m), Xenon (131Xe54m), Hafnium (178Hf72m), Hafnium (179Hf72m), Iridium (193Ir77m), or Platinum (195Pt78m).

62) (Withdrawn) Method of manufacturing according to claim 59 in which the aforementioned kind of excited isomer nuclides is Niobium (93Nb41m).

63) (Withdrawn) Method of manufacturing according to claim 59 in which the aforementioned kind of excited isomer nuclides is Cadmium (113Cd48m).

64) (Withdrawn) Method of manufacturing according to claim 59 in which the aforementioned kind of excited isomer nuclides is Indium (115In49m).

65) (Withdrawn) Method of manufacturing according to claim 59 in which the aforementioned kind of excited isomer nuclides is Tin (117Sn50m).

66) (Withdrawn) Method of manufacturing according to claim 59 in which the aforementioned kind of excited isomer nuclides is Tin (119Sn50m).

67) (Withdrawn) Method of manufacturing according to claim 59 in which the aforementioned kind of excited isomer nuclides is Tellurium (125Te52m).

68) (Withdrawn) Method of manufacturing according to claim 59 in which the aforementioned kind of excited isomer nuclides is Hafnium (178Hf72m).

69) (Currently amended) Method of use of a system of entangled samples comprising excited nuclei of at least one kind of excited isomer nuclides, except where said kind of excited isomer nuclides is Cadmium (111Cd48m), in which at least one said excited isomer nuclide has at least one metastable state that deexcites by emitting gamma rays, called hereafter deexcitation gamma rays, in which at least some of said excited nuclei form groups of two or several entangled excited nuclei, which are distributed in whole or in part of the aforesaid samples, called thereafter by convention entangled samples, the aforementioned entangled samples being able to be separated in space and presenting quantum couplings between some of said excited nuclei contained in these separate samples, said method of use to control a remote deexcitation by employing some of the aforementioned entangled samples, comprising at least the following steps:

(a) one separates in space whole or part of said entangled samples of the aforesaid system of entangled samples containing some aforementioned excited nuclei presenting some quantum couplings, certain of the aforesaid excited nuclei being distributed on some of these said entangled samples,

(b) one exploits said quantum couplings between said excited nuclei of certain of the said entangled samples of the aforesaid system of entangled samples, independently of the distances, of mediums separating them, and independently from the mediums in which these said entangled samples are located:

(i) by causing at least a modulated stimulation of the deexcitation of the aforesaid excited isomer nuclides, by X-ray or gamma irradiation, for example obtained by means of a source of Iron 55, within at least one of the aforesaid entangled samples, qualified as master entangled sample, said modulated stimulation inducing, by means of the aforesaid quantum couplings, a remote deexcitation of one or more of the other aforesaid entangled samples, qualified as slave entangled samples, the aforesaid modulated stimulation applied to said master entangled sample denoting the emission of at least one information or at least one control to be transmitted,

(ii) and, either by determining, either at least one detection of information, or at least one detection of remote control, by means of at least one measurement made with a detector of gamma radiation, of at least an additional modulated deexcitation on at least one characteristic line of at least one aforesaid isomer nuclide contained in at least one of the other aforesaid slave entangled samples, or by using the gamma radiation resulting from the additional modulated deexcitation from at least one aforesaid isomer nuclide contained in at least one of the other aforesaid slave entangled samples, as a local control, or by using at least one of the other aforesaid slave entangled samples, as a product of which the radiation is operated by remote control from the aforesaid master entangled sample to irradiate the environment of the said slave entangled sample, or a combination of these exploitations.

70) (Unchanged) Method of use according to claim 69 in which one employs aforementioned entangled samples containing aforementioned excited nuclei of at least two aforementioned isomer nuclides, whose gamma response of at least one said entangled slave sample either is measured, or is used to irradiate its environment.

71) (Unchanged) Method of use according to claim 69 in which one employs aforementioned entangled samples containing aforementioned excited nuclei of at least one aforementioned isomer nuclide, of which the gamma response is made up of a plurality of lines from which at least two lines are measured simultaneously, for example to improve the signal to noise ratio during the measurement carried on the aforementioned entangled slave sample or on the aforementioned entangled slave samples.

72) (Unchanged) Method of use according to claim 69 in which the aforementioned modulated stimulation is specified in amplitude on at least one aforementioned entangled master sample.

73) (Unchanged) Method of use according to claim 69 in which the aforementioned modulated stimulation is specified in time on at least one aforementioned entangled master sample.

74) (Unchanged) Method of use according to claim 69 to remotely transmit information, in particular emergency signals, remote controls, data acquisition, in mines, or sea-beds, in particular by means of robots and submarines, or in drillings, or in outer space, in particular at very long distances.

75) (Unchanged) Method of use according to claim 69 for medical use in order to irradiate an organ in which at least an aforementioned slave entangled sample is laid near or in the aforesaid organ, by causing a remote stimulation by means of at least one other aforementioned master entangled sample.

76) (Currently amended) Method of use according to claim 69 in which the aforementioned kind of excited isomer nuclides is chosen within the group of Niobium (93Nb41m), ~~Cadmium (111Cd48m),~~ Cadmium (113Cd48m), Cesium (135Ce55m), Indium (115In49m), Tin (117Sn50m), Tin (119Sn50m), Tellurium (125Te52m), Xenon (129Xe54m), Xenon (131Xe54m), Hafnium (178Hf72m), Hafnium (179Hf72m), Iridium (193Ir77m), or Platinum (195Pt78m).

77) (Unchanged) Method of use according to claim 69 in which the system of entangled samples have been manufactured by a process comprising the following steps:

(a) one prepares together samples containing nuclei of at least one kind of isomer

nuclides having at least one metastable state,

(b) one proceeds to the irradiation by means of gamma rays, at least partly entangled, of a sufficient energy to excite certain of the aforesaid nuclei of the aforesaid isomer nuclide to at least one metastable state, the said entangled gamma rays forming groups which are generated, for example, either by a source of gamma rays emitted in a cascade, or by a generator of gamma rays coming from the Bremsstrahlung of accelerated particles, the groups of said gamma rays, when they are entangled, exciting the corresponding said nuclei of the said isomer nuclides distributed in the said samples irradiated together and forming the separate entangled samples of the aforesaid system of entangled samples.

78) (Currently amended) Method of use according to claim 77 in which the aforementioned kind of isomer nuclides is chosen within the group of Niobium (93Nb41m), ~~Cadmium (111Cd48m),~~ Cadmium (113Cd48m), Cesium (135Ce55m), Indium (115In49m), Tin (117Sn50m), Tin (119Sn50m), Tellurium (125Te52m), Xenon (129Xe54m), Xenon (131Xe54m), Hafnium (178Hf72m), Hafnium (179Hf72m), Iridium (193Ir77m), or Platinum (195Pt78m).

79) (Unchanged) Method of use according to claim 69 in which the aforementioned kind of excited isomer nuclides is Niobium (93Nb41m).

80) (Unchanged) Method of use according to claim 69 in which the aforementioned kind of excited isomer nuclides is Cadmium (113Cd48m).

81) (Unchanged) Method of use according to claim 69 in which the aforementioned kind of excited isomer nuclides is Indium (115In49m).

82) (Unchanged) Method of use according to claim 69 in which the aforementioned kind of excited isomer nuclides is Tin (117Sn50m).

83) (Unchanged) Method of use according to claim 69 in which the aforementioned kind of excited isomer nuclides is Tin (119Sn50m).

84) (Unchanged) Method of use according to claim 69 in which the aforementioned kind of excited isomer nuclides is Tellurium (125Te52m).

85) (Unchanged) Method of use according to claim 69 in which the aforementioned kind of excited isomer nuclides is Hafnium (178Hf72m).

86) (Withdrawn) Device of manufacturing especially adapted to a plurality of implementations of the method of manufacturing according to claim 59 to manufacture two or more supports comprising a plurality of aforementioned systems of entangled samples being distributed according to a defined ordering on at least two said supports, according to the optimization of the apparatus of excitation.

87) (Withdrawn) System of quantum transmission especially adapted to apply the method of use according to claim 69 comprising at least one device of quantum emission especially adapted for the implementation of the aforementioned emission of at least one information or at least one control, and at least one device of quantum reception especially adapted for the implementation of the aforementioned determining, either of at least one detection of information, or of at least one detection of remote control.

88) (Withdrawn) Device of quantum emission especially adapted for the implementation of the emission of at least one information or at least one control according to the method of use of claim 69.

89) (Withdrawn) Device of quantum emission according to claim 88, said implementation of the emission of at least one information or at least one control being especially adapted to the use of at least one entangled support comprising a plurality of entangled samples pertaining to a plurality of the aforementioned systems of entangled samples.

90) (Withdrawn) Device of quantum reception especially adapted for the implementation of the determination, either of at least one detection of information, or of at least one detection of remote control, according to the method of use of claim 69.

91) (Withdrawn) Device of quantum reception according to claim 90, said implementation of the determination, either of at least one detection of information, or of at least one detection of remote control, being especially adapted to the use of at least one entangled support comprising a plurality of entangled samples pertaining to a plurality of the aforementioned systems of entangled samples.

92) (Withdrawn) Method of use of one entangled sample in which said entangled sample is especially adapted to communicate with at least another entangled sample of a system of entangled samples according to claim 47, to emit at least one information or at least one command remotely.

93) (Withdrawn) Method of use of one entangled sample in which said entangled sample is especially adapted to communicate with at least another entangled sample of a system of entangled samples according to claim 47, to determine, either at least one detection of remote information, or at least one detection of remote control.